Electronic Supplementary Information for *Soft Matter* manuscript: Microstructures and mechanics in the colloidal film drying process

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Figures S1, S2, and S3 present the constant normal stress drying results at stress Péclet numbers Pe_Σ = 2, 10, and 50, corresponding to Figures 5, 6, and 11 in the manuscript, respectively.

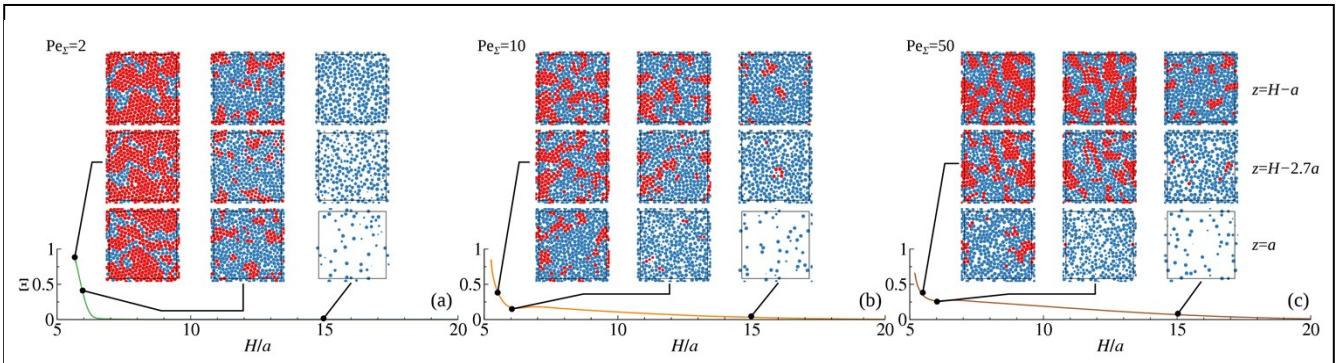

Figure S1: (Color online) Cut-plane views of the simulation cells at $z = H - a$, $z = H - 2.7a$, and $z = a$ with different gap width H for (a): $Pe_\Sigma = 2$, *(b):* $Pe_\Sigma = 10$, *and (c):* $Pe_\Sigma = 50$. *The crystalline particles are colored red, and liquid-like particles are colored blue. The corresponding evolution of Ξ as a function of H is also presented.*

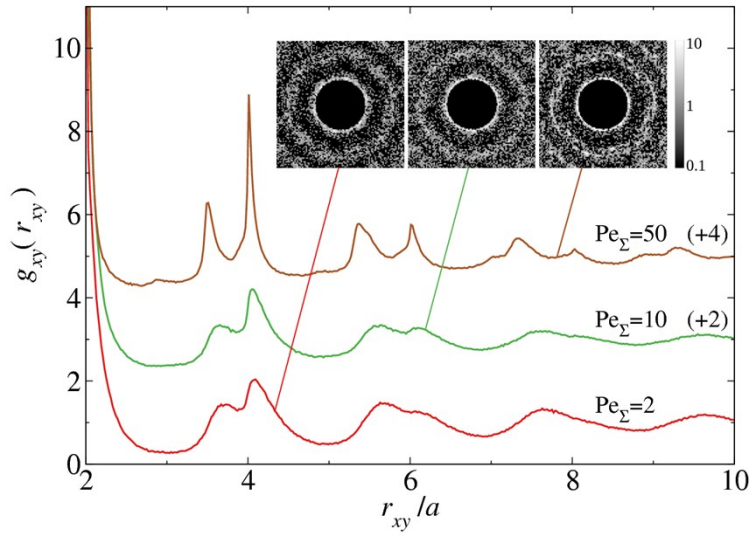

Figure S2: (Color online) The average planar radial-distribution function in the xy-plane, $g_{xy}(r_{xy})$, measured at $z = H - a$ for $Pe_\Sigma = 2$, 10, and 50 when the gap width $H = 6a$. For clarity the results at $Pe_\Sigma = 10$ and 50 are shifted up by 2 and 4, respectively. The insets show the 2D planar pair-distribution function corresponding to the top snapshot in the middle column in Figs. S1a, S1b, and S1c.

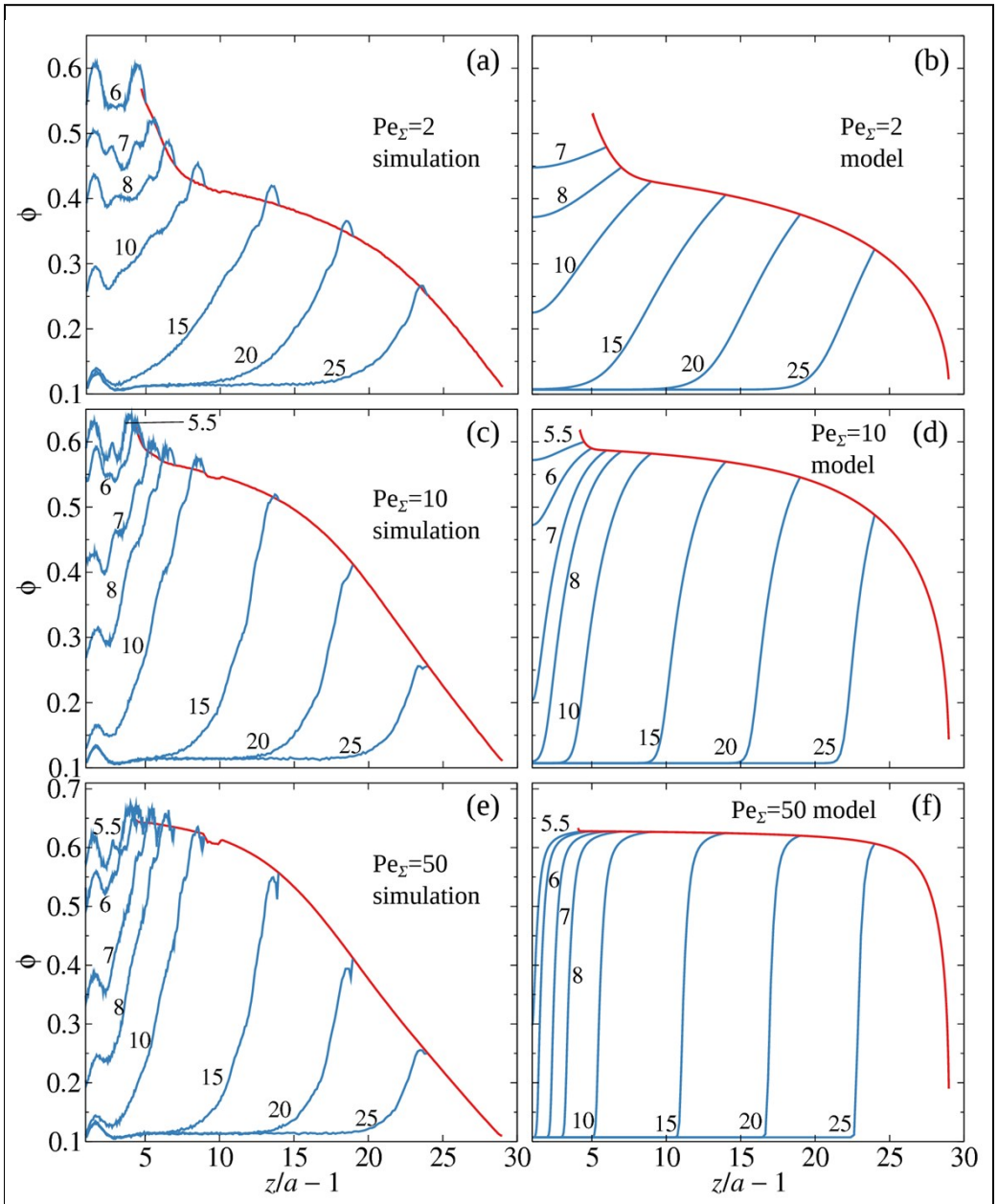

Figure S3: (Color online) Local volume fraction φ(z) in constant normal stress drying at (a), (b): $Pe_\Sigma = 2$, *(c), (d):* $Pe_\Sigma = 10$, *and (e), (f):* $Pe_\Sigma = 50$. *Simulation measurements are shown in (a), (c), and (e), and model results are shown in (b), (d), and (f). The local volume fractions next to the moving interface are shown in red, and the volume fraction distributions at the denoted H/a are shown in blue.*